

WHAT IS CLAIMED IS :

1 1. A reel-deployable printed circuit board comprising:

2 an elongated, flexible base board having opposite edges and a slit formed into
3 it, the slit having an inner periphery defining a unit board within the flexible base
4 board; and,

5 a connection bar connecting the unit board to the base board such that the unit
6 board is pivotable on the connection bar relative to the base board.

1 2. The circuit board of Claim 1, further comprising:

2 a bonding pad on a top surface of the unit board;

3 a contact on a bottom surface of the unit board; and,

4 a via hole through the unit board electrically connecting the bonding pad to the
5 contact.

1 3. The circuit board of Claim 2, wherein the contact comprises a layer of copper plated
2 with gold.

1 4. The circuit board of Claim 1, further comprising a dam inside the inner periphery of
2 the slit.

1 5. The circuit board of Claim 1, wherein the base board is made of a glass-epoxy mate-
2 rial.

1 6. The circuit board of Claim 1, wherein the base board includes a sprocket hole along at
2 least one of the edges thereof.

1 7. The circuit board of Claim 1, wherein the base board includes a position hole along
2 one of the edges thereof.

1 8. The circuit board of Claim 2, further comprising:

2 a semiconductor chip attached to an upper surface of the unit board, the chip
3 having a connection pad on an upper surface thereof; and,

4 a conductive wire having opposite ends, each bonded to a respective one of the
5 bonding pad on the unit board and the connection pad on the chip.

1 9. The circuit board of Claim 8, further comprising an encapsulant formed on the top
2 surface of the unit board and encapsulating a region including the chip, the conductive wire,
3 the bonding pad, and the connection pad.

1 10. A method for manufacturing a semiconductor package using a reel-deployable printed
2 circuit board, comprising:

3 (A) forming a printed circuit board comprising an elongated, flexible base board hav-
4 ing opposite edges and a slit cut through it, the slit defining a unit board within the flexible
5 base board that is connected to the base board and pivotable relative to it by means of a con-
6 nection bar extending between the two boards in a direction perpendicular to the long direc-
7 tion of the base board, the unit board having top and bottom surfaces, a bonding pad on the
8 top surface, a contact on the bottom surface, and a via hole electrically connecting the contact
9 with the bonding pad;

10 (B) attaching a semiconductor chip to the top surface of the unit board;

11 (C) electrically connecting the semiconductor chip to the bonding pad; and,

12 (D) encapsulating the top surface of the unit board with an encapsulant in a region in-
13 cluding the semiconductor chip and the bonding pad.

18. The method of claim 10, wherein encapsulating the unit board further comprises:
 disposing a mold over the unit board;
 transferring a molten encapsulant into the mold; and,
 solidifying the encapsulant.

19. The method of claim 10, wherein electrically connecting the semiconductor chip to the bonding pad further comprises bonding a wire having opposite ends to respective ones of the bonding pad and the chip.

20. The method of claim 10, wherein electrically connecting the semiconductor chip to the bonding pad further comprises:
 forming a ball of conductive metal on the bonding pad or on a connection pad formed on a surface of the chip;
 orienting the chip with respect to the unit board such that the bonding pad and the connecting pad are opposed to each other, with the conductive metal ball interposed therebetween; and,
 melting the ball such that it electrically connects the pads to each other.